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ABSTRACT

Covering all grade levels, this bibliography has been compiled to serve as a guide to school districts considering the purchase of instructional materials on the metric system. The materials are listed alphabetically by type in the following order: charts, films, filmstrips, games, kits, posters, recordings, slides, transparencies, miscellaneous items, printed materials, and United States Government documents. Information about each item includes the title, source, price and frequently the grade level and a brief description of the content. The addresses of the producers and publishers are included. (RG)

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metric system

2

indiana department of public instruction
harold h. negley, superintendent

instructional materials

SE 022 385

BIBLIOGRAPHY ON THE METRIC SYSTEM

Instructional Materials

Indiana Department of Public Instruction
Harold H. Negley, Superintendent

Division of Instructional Media
Phyllis Land, Director

January, 1974

METRIC SYSTEM – INSTRUCTIONAL MATERIALS

This bibliography was compiled to fill a need arising from the contemplated adoption of metric units of measurement in the United States. The metric system will soon become an integral part of the curiculum of our schools, and educators are interested in knowing what materials and methods are available for teaching it. The staff of the Metropolitan School District of Perry Township did the preliminary searching of these titles; the project then became a cooperative effort of the Metropolitan School District of Wayne Township and the Division of Instructional Media of the Indiana Department of Public Instruction. Many of the items listed here have been purchased by the Metropolitan School District of Wayne Township and will be exhibited throughout Indiana at various professional meetings and workshop sessions.

The items listed here represent a cross-section of materials presently available. Obviously no listing can be all-inclusive. It should be emphasized that this bibliography does not constitute an official list; it does not indicate an endorsement of any kind. It is to serve only as a guide.

Karen G. Beam
Instructional Media Consultant

CHARTS

Classroom Metric Lines (GR 4-8)

Includes metric line measurement charts drawn to a common one-meter length to illustrate basic linear units. Four compare American units to metric units, four display the meter and its division. Instructor.
(set of 8 charts, No. 735, $3.50)

Decimal Lines (GR 4-8)

Eight separate 37" x 6¼" lines graphically present decimals and common fractions. Helpful in computational work in the four basic processes, for comparing like and unlike, and concepts of "greater than" and "less than." Instructor.
(chart No. 734, $3.75)

Deluxe Cook 'N Sew English-Metric Calculator (GR 7-ADULT)

Facilitates the conversion calculations encountered in the English to metric transitional period in grocery shopping, decorating and the use of cookbooks and dress patterns. Union Carbide.
(1 chart, $2.50)

English-Metric Conversion Calculator (GR 7-ADULT)

Converts temperature, liquid, weight, linear, square and cubic measurements. Union Carbide, 1972.
(5" x 10" chart, $2.50)

English-Metric Converter (GR 10-ADULT)

Converts English measurement to metric. Also provides conversion factors for length, area, volume, weight, pressure, energy, work or power. TAD Products.
(chart No. 25-6000, $5)

Inches-Millimeters Conversion Calculator (GR 9-ADULT)

Converts between mm and inches any value from .0001 inches to 99.999 inches. TAD Products.
(dial chart No. 25-9235, $9.95)

Measurement Chart

Size 54" x 44". In color. Traces the development of units like foot, yard, mile and pound. Metric system is presented graphically, as is the scientific system of notation by powers of 10. Denoyer-Geppert.
(No. 421862-14 on spring roller, steel board, cover, $15)
(No. 421862-14 wood rods, top and bottom, $9.50)

Meter Stick (GR 4-ADULT)

Printed on both sides. Ideal.
(1 chart [meter stick 3/16" thick, 11/8" wide], $.50)

Metric Area Measuring Grid (GR 1-6)

Grid lines are engraved on transparent plastic board at centimeter intervals. Invicta.
(chart No. 1086, $1.30)

Metric Measure Wall Charts (GR 7-ADULT)

Includes basic units, prefixes for base units, cooking measure equivalents, and illustrated conversions of length, area and volume. Union Carbide.
(2 charts, $3.50)

Metric Place Value Chart (GR 5-10)

Shows decimal point relationships and the meaning of meter, liter and gram. Ideal.
(chart No. 7777, $2.80)

The Metric System (GR 4-8)

Topics include: metric system, prefixes, metric units, metric weight, metric capacity, metric length, meter, centimeter, kilometer, gram, kilogram and liter. Included also is a table of conversion. Instructor.
(Set of 12 charts, No. 523, $3.50)

Metric System Chart

Size 46" x 29". Printed in colors. Explains by illustration, text and tables the comparison of the internationally accepted metric system of measurement and the American system. Denoyer-Geppert.
(No. 420712-14 on spring roller, steel board, cover, $14.25)
(No. 420712-10 wood rods, top and bottom, $10.50)

Metric System Charts (GR 7-12)

Set of 3 charts, 23" x 29", in full color, with large type. Creative Visuals, 1974.
(No. C-MGB-4, $7.50)

Metric Wall Chart (GR 10-ADULT)

Compares English and metric measurements of length, area, volume, mass and capacity. Also includes summary of prefixes and a table of common equivalents and conversion. TAD Products.
(28" x 42" chart, No. 25-9238, $3.75)

Wall Chart Conversion Tables (GR 9-ADULT)

Explains conversion factors involving measurement terms most commonly used in schools and industry. TAD Products.
(set of 2 charts, No. 25-9239, $7.25)

Weight Volume Computer (GR 12-ADULT)

Solves variety of problems involving weights and volumes. Can be used for pricing and as a slide rule. TAD Products, 1968.
(chart and booklet, No. 25-5100, $6.50)

Discover – Why Metric
Metric Mike, the central character, provides the basic principles needed to understand the metric system. Swani Division of Regal-Beloit Corp., 1972.
(Super 8, col., $115)

How To Use a Metric Ruler (GR 1-6)
Emphasize relationships of millimeters and centimeters to the meter. Visual Ed. Consult.
(Super 8 Tech., col. cap loop, $8)
(Super 8 Kodak, col. cap loop, $8)

Linear Measurement: Meter Stick (GR 9-12)
Universal Ed.
(Super 8 Tech., col. loop, $22)
(Super 8 Kodak, col. loop, $22)

Mass Measurement: Metric System (GR 9-12)
Universal Ed.
(Super 8 Tech., col. loop, $22)
(Super 8 Kodak, col. loop, $22)

Metric Measure Relationships (GR 9-12)
Universal Ed.
(Super 8 Tech., col. loop, $22)
(Super 8 Kodak, col. loop, $22)

Metric System (GR 7-12)
Kavic House.
(9 Super 8 Tech., col. loops, $216)
(9 Super 8 Kodak, col. loops, $216)

The Metric System (GR 1-6)
Includes subseries: "What Is Measurement?"; "Linear Measurement"; "Area and Volume Measure"; and "Weighing and Measuring." Sterling.
(20 Super 8 Tech., col. loops, $400)

Metric System: Decimal Calculating (GR 7-12)
Shows how the decimal system is based on 10 and its multiples. Using money as the illustration shows how decimals are easier to use than fractions in calculating. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: English & Metric Lengths (GR 7-12)
English and metric lengths are compared – the yard versus the meter, inches versus centimeters, and miles versus kilometers. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: English & Metric Weight & Volume (GR 7-12)

English and metric weights and volumes are shown and compared – the pound versus the kilogram, the ounce versus the gram, and the quart versus the liter. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: History of Measurement (GR 7-12)

The history and evolution of measurement from ancient times up to the modern metric system is described. The need for a universally-accepted measuring system is shown. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Its Advantages (GR 7-12)

Illustrates basic units for length, mass and volume, and some of the prefixes for multiples and sub-multiples for all metric units. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Long Lengths (GR 7-12)

Metric long length measurements are shown. Examples given are map reading and space exploration. Prefixes for large multiples of length are shown and defined. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Review & Test – General Use (GR 7-12)

Shows various metric measurements in everyday use. Asks viewer to name the basic metric unit of measurement in each instance then gives each answer in turn. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Review & Test – Units & Readings (GR 7-12)

Asks viewer to name various basic metric units. Viewer is asked to identify several metric measurements. Film allows about 5 seconds for viewer to answer, then it gives each answer in turn. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Short Lengths (GR 7-12)

The meter and its division of decimeters, centimeters and millimeters are explained. A woodworking plan is shown and a metric length is measured and marked according to that plan. Visual Instruction.
(Super 8 Tech. loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Volume (GR 7-12)

The cubic length basis for metric volume is shown and the liter (cubic decimeter) is defined. One liter is shown to be about four cupsful. 800 milliliters are measured for a metric formula. Visual Instruction.
(Super 8 Tech., loop, $20)
(Super 8 Kodak, loop, $21)
(3/4 Umatic video tape cassette, $20)

Metric System: Weight (GR 7-12)

A mass of water equivalent to the basic unit of one kilogram is weighed. Uses of metric mass in recipes and medicines are shown. A chemical formula calls for 8.2 grams which is weighed on a pan balance. Visual Instruction.
(Super 8 Tech., loop, $20)

Metric System of Measurements

ESB-Edcomb.
(12 Super 8 loops, $20 each)

Weighing and Measuring (GR 1-6)

· Kavie House.
(5 Super 8 Tech. loops, $120)
(5 Super 8 Kodak loops, $120)

9

16mm FILMS

Discover . . . Why Metric
Metric Mike, the central cartoon character, provides the basic principles needed to understand the metric system. Swani Division of Regal-Beloit, 1972.
(14 min., col., $195)

International System of Units (JR. – SR. HIGH SCHOOL)
Helps establish the fundamental variables of physical science, including measurements of length, mass, temperature and time. Discusses metrics, conversion and the value of measuring methodology. King Screen Productions, 1970.
(21 min., col., $250)

Learning About Metric Measures (PRIMARY – JR. HIGH SCHOOL)
Introduces basic concepts. Identifies and defines the units of the meter stick. Uses the terms decimeter, centimeter, millimeter and meter. Shows the relationship of the metric and decimal systems. BFA Educational Media, 1970.
(16 min., col., $215)

Meter, Liter and Gram (INTERMEDIATE – HIGH SCHOOL)
Introduces the three basic units of the metric system. Shows how other units are derived from these three basic units. BFA Educational Media, 1970.
(13 min., col., $170)

A Metric America (JR. HIGH – ADULT)
An animated parable of imaginary people called "Wimples" and the difficulties they experience with their cumbersome measuring system. Gives reasons for U.S. adoption of metric and introduces the meter, liter, kilogram and celsiua. AIMS.
(Col. Code No. 9345, $215)
(Rental, $20)

The Metric System (INTERMEDIATE – JR. HIGH SCHOOL)
Animated presentation. From the Mathematical Relationship Series. NBC Educational Enterprises, 1971.
(13 min., col., $180)

The Metric System, Parts I & II
Pictura Films.
(12 min., col., $150 each)

The Metric System Series
Sterling, 1970.
What Is Measurement? (INTERMEDIATE)
Discusses need for units of measurement and the desirability of a standard universal system like the metric system.
Area and Volume Measure (INTERMEDIATE – JR. HIGH)
Considers the multitude of different units of measure we use, the difficulties this causes and presents the metric system as way to end the problem.
Linear Measure (INTERMEDIATE – JR. HIGH)
Discusses the shape of the earth and suggests using the earth as a standard for linear measure.
Weighing and Measuring (INTERMEDIATE)
Discusses the common English system of weighing and introduces the metric system.
(4 films – 10 min., col., $135 each)

Metrics for Elementary Series
Oxford Films.
Titles:
"Length and Distance"
"Volume and Capacity"
"Weight and Mass"
(3 films – 10 min., col., $140)

Think Metric! (INTERMEDIATE – JR. HIGH)
Coronet, 1974.
(Col., $180)
(B & W, $90)

FILMSTRIPS

English System of Measurement (GR 1-6)
Universal Ed.
(1 filmstrip, No. 17824, $6)

How to Read a Ruler-Metric System (GR 7-12)
Creative Vis.
(1 filmstrip, 1 cassette, No. S1511-FST-36, $12.50)
(1 filmstrip only, $7.50)

The International System of Units-Metric Units (JR. HIGH)
The seven basic units of the system are discussed, and a three-step plan for metric conversion is presented. Clearvue.
Titles:
"Introduction to the International System of Units"
"Metric Units: Time and Temperature"
"Metric Units: Mass and Its Derivatives"
"Metric Units: Electric Current, Luminous Intensity, Amount of Substance, and the Plane and Solid Angle"
(set of 4 filmstrips, 2 records, teacher's guide, No. CL550-SBR, $50)
(set of 4 filmstrips, 2 cassettes, teacher's guide, No. CL550-SBTC, $54)

Introducing the Metric System (ELEMENTARY, JR. HIGH, SR. HIGH)
Clearly presented series which illustrates the advantages of the metric system. Bailey Film Associates, 1972.
Titles:
"The Meaning of Metric Measuring Lengths"
"Volume and Mass Converting to Metric"
(4 filmstrips, 2 records, $48)
(4 filmstrips, 2 cassettes, $52)

Learning to Measure in a Metric World (PRIMARY – INTERMEDIATE)
Introduces the young learner to the concepts of measurement and the metric system. English units are not presented. Eye Gate, 1973.
Titles:
"Why Do We Measure?"
"How Tall, How Far and How Fast?"
"How Much Can It Hold?"
"How Much Does It Weigh?"
(set of 4 color filmstrips with 2 cassettes, No. TX 462, $38)

Let's Take Measures, For Good Measure
Includes rhymes, familiar objects and everyday situation with which the pupils can identify. Teaches that measurement is vital and shows how to use measuring tools. Education Corp. of America, 1974.
Titles:
"Numbers Are Names"
"Measuring How Far, How Long, How Tall"
"Comparing"
"Metric Terms"
"More Metric Terms"

(5 filmstrips, 5 records, No. R501, $66.50)
(5 filmstrips, 5 cassettes, No. C501, $66.50)

Measurement (GR 7-12)

These two filmstrips, "History of the Measurement of Length" and "A Metric Future," form a unit of the science of accuracy, from the first crude beginnings to the use of the metric system. Visual Ed. Consult.
(2 filmstrips, guide, No. K-1475, $7)

Measurements (INTERMEDIATE – JR. HIGH)

Covers the history of measurement, standards, metric measurement and instrumentation. Sargent-Welch.
Titles:
"Standards and Measurement"
"Measurement Systems and Theory"
(2 filmstrips, 1 record, No. M3994Z, $19)
(2 filmstrips, 1 cassette, No. M3994Z-01, $21)

Measuring (INTERMEDIATE)

Designed to help demonstrate important concepts in measuring. Encyclopaedia Britannica.
Titles:
"The Metric System of Measuring"
"Measuring Distance"
"Measuring Weight"
"Measuring Volume and Density"
"Measuring Time by the Sun and the Stars"
(individual filmstrips, $6 each)
(series of 5, No. 11120, $30)

A Metric America (JR. HIGH – ADULT)

Covers the major concepts of the metric system. AIMS.
Titles:
"The Metric System – Historically Speaking"
"Measuring Length Metrically"
"Measuring Area Metrically"
"Measuring Volume Metrically"
"Measuring Weight Metrically"
"Measuring Temperature Metrically"
(6 filmstrips with records, No. F1250, $78)
(6 filmstrips with cassettes, No. F1251, $90)

Metric or English? That is the Question (INTERMEDIATE – JR. HIGH)

The series traces the historical backgrounds of both the English and the metric systems and clearly points out the advantages and disadvantages of both. Students will learn how the metric system works, the problems inherent in conversion and the ultimate economic advantage of increased foreign trade after conversion. Clearvue.
Titles:
"History of the English System"
"Characteristics of the Metric System"
"Why Go Metric?"
(4 filmstrips, 2 records, teacher's guide, No. CL550-S-R, $36.50)
(4 filmstrips, 2 cassettes, teacher's guide, No. CL550-SATC, $40.50)

Metric Package (JR. HIGH – ADULT)

Provides explanations of the metric system as it will apply to business and industry. United Systems, 1973.

Titles:

"Introduction to the Metric System"
"Basic and Derived Units"
"Linear Measurement and Precision Instruments"
"Geometric Dimensioning and Tolerancing"
"Science and Metrics – Part I"
"Science and Metrics – Part II"

(35mm color slide/cassette – 6-program package, $325; $65 each)
(35mm filmstrip/cassette – 6-program package, $280; $55 each)
(Sony videocassette – 6-program package, $850; $160 each)

Metric System

Denoyer-Geppert
(1 filmstrip, No. 665461, $6.75)

The Metric System

Uses interesting characters, real-life situation and familiar objects. Includes worksheets to give pupils practice. Comprehensive teacher's guide. Education Corp. of America, 1974.

Titles:

"Measurement"
"History of English-American System"
"Measuring Length and Volume" (English-American)
"Measuring Length and Volume" (Metric)
"How Does the Metric System Work?"
"Advantages of the Metric System"

(7 filmstrips, 7 records, No. R-502, $93.50)
(7 filmstrips, 7 cassettes, No. R-502, $93.50)

Metric System (INTERMEDIATE)

Holt, Rinehart and Winston.
(No. 6H-9, $6.90)

The Metric System (GR 7-12)

Introduces the metric system, relating metric units to equivalent English units. Correlated with *Using Mathematics, 9*, by Henderson and Pingry. McGraw-Hill.
(1 filmstrip, col., No. 0430, 10-4, $8.50)

Metric System (ELEMENTARY-ADULT)

Explains advantages and disadvantages of metric and English systems and effects of adoption of the metric system in the U.S. Sargent-Welch Scientific Co.

Titles:

"History of the English System"
"History of the Metric System"
"Characteristics of the Metric System"
"Why Go Metric?"

(4 filmstrips, 2 records, No. M6125R, $36.50)
(4 filmstrips, 2 cassettes, No. M6125C, $40.50)

The Metric System (PRIMARY-INTERMEDIATE)
Sargent-Welch Scientific Co.
Titles:
"What Is Measurement?"
"Let's Look at Length"
"Let's Look at Volume"
"Let's Look at Mass"
(4 filmstrips, 2 records, No. M6125G, $36.75)
(4 filmstrips, 2 cassettes, No. M6125F, $39.75)

Metric System (GR 1-6)
Universal Ed.
(1 filmstrip, col., No. 17827, $6)

The Metric System for the Intermediate Grades, Set 1 (GR 4-8)
Length, area and volume.
Titles:
"Units of Length Less Than a Meter"
"Units of Length Greater than a Meter"
"Metric Units of Area and Metric Units of Volume."
Guide, Pathescope.
(4 filmstrips, 4 records, No. 306, $52)
(4 filmstrips, 4 cassettes, No. 306C, $60)

The Metric System for the Intermediate Grades, Set 2 (GR 4-8)
Capacity, mass, metric relationships.
Titles:
"Metric Units of Capacity"
"Metric Units of Mass and Relating Length, Capacity and Mass."
Pathescope.
(3 filmstrips, 3 records, No. 307, $39)
(3 filmstrips, 3 cassettes, No. 307C, $45)

Metric System of Measurement
Learning Resources Division, Educational Development Corp., available June, 1974.
Titles:
"History of Measurement"
"Measuring Length"
"Measuring Weight"
"Measuring Volume"
(4 filmstrips, with records, $51.80)
(4 filmstrips, with cassettes, $58)

Metric System of Weights and Measures
Includes progress graphs and metric charts. International Tutors. Topics covered in units: length, weight, capacity, area and volume, and conversions.
(63 filmstrips, Set No. 7, $140)

The Metric System – The Universal Language of Measurements (GR 7-COLLEGE)
Provides illustrations and discussions to help the student learn the metric prefixes and apply them to all metric measures; gain a solid grasp of meters, grams, liters, square and cubic units; and comprehend conversions between metric units as well as conversions between the English and the metric system. Pathescope.
(6 filmstrips, 6 records, No. 516, $72)
(6 filmstrips, 6 cassettes, No. 516C, $84)

Metric Weights and Measures (GR 7-12)

Illustrates the principles of length, volume and weight in the metric system. Library Films.
(1 filmstrip, 1 cassette with audible signal, $23)
(1 filmstrip, 1 cassette with inaudible signal, $23)
(1 filmstrip, 1 record, $21)

Metrics (GR 3-6)

Illustrates familiar kinds of measurement activities using the metric system. Based on the "I do, I learn" teaching philosophy. AIDS, 1973.
(5 filmstrips, with records, $80)
(5 filmstrips, with cassettes, $80)

Metrification of America

Westinghouse Learning Press.
(set of sound filmstrips, $59.50)

The SI

Extends "The Metric System" sets to include the additional units of International System of Units. Sargent-Welch Scientific Co.
Titles:
"Introduction to SI"
"Time and Temperature"
"Mass and Its Derivatives"
"Electric Current, Luminous Intensity, Amount of Substance, Plane and Solid Angle"
(4 filmstrips, 2 records, No. M6125S, $50.50)
(4 filmstrips, 2 cassettes, No. M6125D, $54.50)

Think Metric!

Involves the student in problem-solving activities. Educational Activities, Inc.
Titles:
"Introducing the Metric System"
"Metric Units of Length"
"Metric Units of Weight"
"Metric Units of Capacity"
(4 filmstrips, 4 records, No. FSR 437, $45.90)
(4 filmstrips, 4 cassettes, No. FSC 437, $49.90)

Think Metric (GR 7-12)

Presents background information on the metric system, the interrelationships of the various metric measurements and their use in everyday life. Educational Products.
(set of 2 filmstrips, cassette, 2 books and 1 bumper sticker, No. 4810, $29)

Thinking Metric (INTERMEDIATE/JR.-SR. HIGH)

Metric system is presented as a logical system of units. Comparisons with the English system are used, but exact mathematical conversions are avoided. Eye Gate, 1973.
Titles:
"Why Metric?"
"Length, Width, Height, & Speed"
"Volume and Capacity"
"Mass and Weight"
(set of 4 filmstrips with 2 cassettes, No. TX463, $41.75)

Understanding the Metric System (PRIMARY – INTERMEDIATE)

Easy to understand vocabulary and artwork in a cartoon style, featuring two central characters with whom students can readily associate. Clearvue.

Titles:

"What is Measurement?"
"Measuring Distance"
"Measuring Weight and Mass"
"Measuring Volume"

(4 filmstrips, 2 records, teacher's guide, No. CL 550-SCR, $36.50)
(4 filmstips, 2 cassettes, teacher's guide, No. CL 550-SCTC, $40.50)

Using the Metric System

Denoyer-Geppert.

(1 filmstrip, No. 663961, $6.75)

17

Centimeter Decimal Set (GR 4-8)
Invicta.
(1 game, plus guide, No. 145, $2.45)

Meter-Liter-Gram (PRIMARY – ADULT)
Educational game in which the stimulation of competition enhances the learning of metric units, symbols, terminology and unit relationships. Designed by Wesley Hampton. Real-T-Facs. 1973.
(1 game, $9)

Metric System (GR 1-6)
Math select-a-step program in which players mount a control strip on the base peg board, then match the answers to the questions. Pegs will accept only correct answers. Visionetics.
(base peg board, No. V-900000, $3)
(Grade 2 program, No. 216206, $2.25)
(Grade 3 program, No. 21606, $2.25)
(Grade 4 program, No. 216405, $2.25)

Metric Trundle Wheel (GR 4-8)
The circumference of the wheel is one meter, marked in 5 cm and 25 cm division. A click is emitted after each complete revolution. To measure a given distance, the pupil walks with the wheel and counts the clicks. Invicta.
(1 game, No. 340, $5.50)

Metrication Game (INTERMEDIATE – ADULT)
Board game for 2 or 4 players, involving travel, skill, investment, collection and chance. Emphasis on the number 10 throughout the game. Metrix Corporation. 1973.
($10)

KITS

Note: Most producers will assemble kits to specifications upon request.

Elementary Measurement Kit

Provides basic equipment for developing measurement concepts. Contains single beam balance, metric weights, Vernier caliper and rulers. Manual. Spectrum.
(No. 9-015, $42)

Introductory Metric Kit

Allows student to become familiar with basic units of metric measurement using an activity-oriented approach. Includes rulers, tape measures, trundle wheel, scales and weights, and beaker. Teacher's guide. Educational Teaching Aid.
(No. 10A, $96.50)

Liter Volume (GR 4-8)

Cube containing factual information on cardboard sides. Science Related Materials.
(kit, No. 1940 SRM, $1.95)

Measurement and Metric System Science Packet

15 metric teaching aids including centimeter rulers, booklets, graph paper, decimeter box, charts, conversion tables, lesson plans and resource listings. National Science Teachers Assn., 1973.
(No. 479-14280, $3)

Measurement Skills. (PRIMARY)

Audio-tutorial kit. Involves seeing, hearing and touching through color filmstrips, cassettes, game cards, practice pads, and rulers. Teacher's guide. Encyclopaedia Britannica Educational Corp., 1972.
Titles:

"Inches and Fractions"
"Centimeters and Decimals"

(complete kit, boxed, $58.75)
(Bilingual [Spanish-English] edition, $58.75)

The Metric Center (GR 5-12)

Covers metric system, length, area, volume, mass and temperature. Includes visual cartridges, measurement tools, worksheets and manual. Enrich.
(kit, $44.95)

Metric Conversion Kit-1

Kit includes wall chart, measurement converter, a book and metric measure tape and ruler. Real-T-Facs, 1973.
(kit, $10)

Metric Exercises

A kit for teaching the metric system of measurement. Includes activities and exercises for different grade levels, a metric ruler, thermometer and "Metric Is Coming" brochure. National Science Teachers Assn.
(No. 471-14664, $6)

Metric Measure (GR 7-12)
For calculating the area and the volume. Set contains prisms, cylinders, pyramids, cones, etc., in a wooden case. Creative Vis.
(kit, guide, No. SWB, $98)

Metric Measure (GR 7-12)
Intended for 36 pupils. Plastic shapes come in a wooden box. Creative Vis.
(kit No. SWA1, $92)

Metric Measure (GR 7-12)
Intended for 36 pupils. Plastic shapes come in a wooden box. Creative Vis.
(kit No. SWA2, $75)

Metric Measurement (GR 3-6)
Complete learning program consisting of 13 lessons, 20 student activities, 2 whole class activities, 1 sound filmstrip and a game. Materials are grouped within instructional modules. Imperial International Learning Corporation.
(class size unit, No. 321-000-00, $450)

Metric Measurement Intro Scien Set
Elementary set of items including rule, blocks, balance, wall chart, thermometer and Vernier caliper. Sargent-Welch.
(kit No. M7650M, $42.50)

Metric Measuring Set
Includes clinometer, gauges, micrometer, calipers. Robic Sales.
(complete set, $37.50)

Metric System Minimodule (PRIMARY)
Box, an animated character, works in the Mathematics Laboratory to discover the meaning and relationships of metric units of length, weight and capacity. SVE. Available April, 1974.
(6 sound filmstrips, games, activities, no price quoted)

Metric System Scienset
Designed for teaching the fundamentals of the metric system. Includes cube models, weights, meter stick and wall chart. Sargent-Welch.
(kit, No. M0150, $64.50)

Metric Weights (GR 4-ADULT)
Ideal.
(kit of 8 weights, $3)

Metrikit
Comparative English-metric measurement kit complete with tools, reference and training materials for home, industry and education. Larry Harkness Co.
(kit, $38.70)

Metri-Kit
Consists of several booklets, books, wall posters, measuring tape and converters. Swani Division of Regal-Beloit, 1972.
($18.95)

Metrikit A-Introductory

Includes tools to help young hands and developing minds to understand how big and how much. Consists of measuring sticks, scales, capacity measures and cubes. Dick Blick.
(No. 88001, $125.80)

Metrikit B-Linear Measurement

Includes tools designed so that the relationships among the units of length are made quite clear. Consists of rules, sticks, calipers, tape measures and a micrometer. Dick Blick.
(No. 88002, $106.80)

Metrikit C-Weight and Mass

Includes items designed to show how weight and mass are related to each other. Consists of scales, weight boards and balances. Dick Blick.
(No. 88077, $147.50)

Quick Conversion Units (GR 1-6)

Two triangular wands, each equipped with a sliding "slight" ring to be used for conversions. Centimeter/inch converter shows the linear and metric equivalents. Visionetics.
(kit of 20 wands, 1 transparency, No. 214655, $9.95)

Rulers (GR 1-6)

Set of 12" rulers in color on laminated board. One centimeter ruler, and four standard rulers. Visionetics.
(kit of 30 rulers, 1 transparency, No. 209656, $5.40)

Single Beam Balance Scale With Metric Weights (GR 4-10)

Graduated in avoir. and metric. Ideal.
(kit of scale, 8 weights, No. 5346, $18.50)

POSTERS

Metric System

Ten 8½" x 11" posters printed on colored index stock show the fundamentals of the metric system. A transparency can be made from each unique poster to aid in your lesson and then the poster can be placed on the bulletin board to remind students of what they learned. Gem Innovations.
(10 posters, $2.45)

Metrically Speaking

Stanley Tools.
(10 posters, $12.95)

Think Metric Posters

Six different illustrations, 432 mm x 559 mm (17" x 22"), show metric dimensions, size, weight, temperature and liquid volume. National Microfilm Assn.
(set of 6 posters, $5.75)

22

RECORDINGS

The Implication of Metric Change (GR 9-ADULT)

Reports given by executives, labor leaders and government officials on "A Metric America," "What Is SI," "The British Experience," "Effect on Large Companies," "Preparing to Convert," "Technical Considerations," "Labor Considerations," "The Government's Role," and "Making Conversion Profitable." Chicago Assn. Commerce and Industry.
(set of 2 cassettes, $20)

Let's Talk Metric (GR 4-8)

Discusses the history of measurement, the terms of the metric system, the relationship between English and metric systems, and the approximate conversions. Creative Services, 1973.
(1 cassette, 1 card, $9)

Linear Conversion: English to Metric (GR 7-9)

Applying one fundamental relationship, a series of worksheet examples of conversions from English to metric measurement is given. The learner develops conversion factors for future use. Wollensak.
(1 cassette, guide, worksheet, $9.95)

Linear Conversion: Metric to English (GR 7-9)

A description of the conversion factors necessary in forming equality among different measuring systems is presented. Following steps used to solve one conversion problem, the learner is guided in solving others developed on the worksheet. Wollensak.
(1 cassette, guide, worksheet, No. 7704, $9.95)

The Metric System (GR 7-ADULT)

Lessons: introduction; linear-millimeter to meter; linear-meter to kilometer; using symbols; perimeter; area of rectangles; area of triangles; area of circles; conversion mass weight; liquid measure and conversion-liter. ESP, 1973.
(1 cassette, 1 workbook, $5.95)

The Metric System (GR 7-12)

Includes the English and metric system/precision in measurement; linear measurement; square measurement; cubic measurement; mass; power/energy; money/temperature; conversions; conversions – fraction to decimal/linear measurement problems/square measurement problems; cubic measurement problems/mass measurement problems; power-energy problems/money-temperature problems. ESP.
(12 cassettes, guides, $60)

The Metric System (GR 4-6)

Instructs in naming the units of length and relationships of units with the meter. Media Materials.
(1 cassette, workbook, guide, $9.95)

Metric System of Weights and Measures. International Tutors.

Includes basic principles; length; weight; capacity; area; volume; equivalent volume; equivalent weight, volume or capacity of water.
(complete set of 8, No. C362-C369, $40)
(individual cassettes, $5.95 each)

Metric System Skills and Drills (GR 4-8)

Each recording teaches four complete, single concept lessons. Prior to each series of questions,

the material is taught and examples are given. Answers are given after each lesson for immediate reinforcement. Educational Activities.
Titles:
"Introducing the Metric System: Working With Basic Prefixes"
"Metric Units of Length"
"Metric Units of Weight"
"Metric Units of Capacity"
(records, No. AR 720-723, $23.95)
(cassettes, No. AC 720-723, $27.95)

Metric Teaching Tapes (GR 3-8)

Cassettes, worksheets, measuring devices to cut out and use, maps and scale drawings. Teacher's guide. Houghton-Mifflin, 1973.
Titles:
"Measuring Length"
"More on Measuring Length"
"Measuring Area"
"Measuring Volume"
"Measuring Weight"
"Review and Temperature"
(set of 6 cassettes, $36)
(individual cassettes, $7.20 each)

24

SLIDES

Measurements

Projectiles are 2" x 2" slides in cardboard mounts, with cassettes and workbooks. Sargent-Welch Scientific Co.

Titles:

"Metric System of Linear Measurement," MS-2480-11-A ($35)
(includes centimeter ruler)
"Metric System of Measurement," MS-2480-11-B ($35)
(Volume and Mass)
"Conversion Between Systems," MS-2480-11-C ($35)
"Density and Specific Gravity," MS-2480-11-D ($35)
"Temperature," MS-2480-11-E ($35)

(5 slide sets, above, No. MS-2480-10, $157.50)
(sound filmstrip set, No. MS-2480-14, $157.50)

Metric System and You

Maynard Research Council.
(71 slides, cassettes, guide, $95)

Understanding and Using the Metric System

Program designed to convey the ease of measuring in metric units. Provides practice problems and many examples of everyday applicability. Denoyer-Geppert.
(80 slides, manual, No. 86975-S, $73.50)

25

TRANSPARENCIES

Basic Trade Measurements-Decimals (GR 7-12)

Includes decimal notation, comparison of decimal and fractional rulers, the micrometer, enlargement of the thimble scale, simplified meter scales, multiple scale meters, etc. United Transparency.
(10 transparencies, No. 8857, $19.50)

English and Metric Measure

3M Company
(23 visuals, No. 15-0748-2, $35)

Measurement

Covers measurement and its historical importance. Includes advantages of metric system, the prefixes and calibrated measuring instruments. Student booklet, Channing L. Bete.
(No. 3979-6105, $69)

Metric System

Introduces the metric system and includes all of the terms and concepts encountered, short of those encountered in highly sophisticated scientific work. Teacher's manual. Creative Visuals. 1974.
(set of 46 transparencies, No. 389.AO-SR, $276)
(individual transparencies, $7 each)

The Metric System (GR 7-12)

Illustrates the origin, features and uses of the metric system. Lansford.
(10 transparencies, No. W124, $49.95)

Metric System and Apothecaries Equivalents (GR 10-ADULT)

Includes the metric system: basic units of measure; multiples of the unit; division of the unit; capacity of volume; converting grams to milligrams; converting liquid measure; apothecaries weight; converting grams to grains; metric and apothecaries systems; volume; converting ounces, grams and milliliters; converting pounds and kilograms; and converting Centigrade and Fahrenheit scales. Robert J. Brady.
(12 transparencies, guide, $55)

Think Metric! (JR. HIGH)

Everything one needs to know to shift from the English system to the metric system. DCA Educational Products, 1972.
Titles:
Group I – "Metric Units" ($40.50)
Group II – "Conversion Factors" ($8.10)
Group III – "Estimating Weights and Measures" ($30.60)
(complete series, $75)

MISCELLANEOUS ITEMS

Metric Measures (GR 5-8)

Designed to help children understand our conversion to the metric system. Instructional Fair.
(book of duplicating masters, No. 2021, $4.95)

Metric Measurement, Activities and Bulletin Boards (GR 4-8)

Includes activities for length, area, weight and volume measurement in the form of background information, metric measurement vocabulary, units and their relationships and bulletin board activities. Instructor.
(booklet, $1.50)

Metric Measuring Activity Cards

48 laminated cards showing 100 activities for introducing measuring and use of tools. Educational Teaching Aid.
(No. 4365. $11.95)

Metric System Study Prints

10 full-color, 33 cm x 46 cm (13" x 18") prints covering currency, length, area, volume, capacity, mass, weight, time, work and energy, and power. Teacher's Guide. E.M. Hale, 1973.
(set of 10 prints, $14.95)

Metric Units of Measure

Six 8½" x 11" manila cards, tabbed and punched for notebook. Cards individualize the teaching of the metric system. Denoyer-Geppert.
(metric units of measure, packaged in plastic, No. 897442, $1.50 each)
(classpack of 30 metric units of measure, No. 897442, $35)

Metrication Converter

Easy to use. Make all English-metric conversions in length, area, weight, volume, temperature. Read equivalents thru "window." Denoyer-Geppert.
(metrication converter, No. 897412, $2.50)
(classpack of 30 metrication converters, No. 897412, $60)

Practice in the Metric System (GR 4-8)

Open-end exercises dealing with prefixes, length, weight, capacity, metric area and volume. Instructor.
(book of duplicating masters, No. 843, $3.95)

Reference Manual-Metrication (COLLEGE-ADULT)

Seminar material discusses techniques for a smooth transition to the metric system including what, when, where and how to convert. Prepared by Hanley L. Riess. TAD Products.
(seminar manual, No. 25-9237, $9.50)

ADDRESSES OF PRODUCERS

AIMS Instructional Media Services, Inc.
Box 1010
Hollywood, Calif. 90028

BFA Educational Media
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Maynard Research Council, Inc.
300 Alpha Drive
Pittsburgh, Pa. 15238

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Sugarload Star Route
Boulder, Colo. 80302

Instructional Materials formerly available from Metric Association are now being sold by:
Ideal School Supply Co.
1100 S. Lavergne Av.
Oak Lawn, Ill. 60453

Metrix Corporation
P.O. Box 19101
Orlando, Fla. 32814

NBC Educational Enterprises
30 Rockefeller Plaza
New York, N.Y. 10020

National Microfilm Association
Suite 1101
8728 Colesville Road
Silver Spring, Md. 20910

National Science Teachers Association
1201 Sixteenth St., NW
Washington, D.C. 20036

Oxford Films
300 W. Golf Road
Mt. Prospect, Ill. 60056

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Pictura Films Distribution Corp.
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Robie Sales Co.
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Chicago, Ill. 60611

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3M Center
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Union Carbide Corporation
Educational Aids Dept.
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Tuxedo, N.Y. 10987

United Systems
246 W. 34th St.
Indianapolis, Indiana 46208

Westinghouse Learning Press
100 Park Av.
New York, N.Y. 10017

29

PRINTED MATERIALS

Adams, H.F.R. *SI Metric Units*. New York: McGraw-Hill, n.d. Gives a good insight into SI units.

Anderton, Pamela, and Biggs, P.H. *Changing to the Metric System*. Palo Alto, Calif.: Pendragon, n.d. ($1.00)

Bowles, D. Richard. *Make Way for Metrication*. Minneapolis: Lerner Publishing, 1973. ($3.95)

Branley, Franklyn M. *Think Metric*. New York: Crowell, 1972. Elem.-Jr. High ($4.50)
Contrasts the English system of measurement with the metric system; describes how accurate standards of measurements were determined for time, length, width, volume, temperature and weight, with emphasis on advantages of the metric system.

Buckeye, Donald. *Introducing the Metric System With Activities*. Troy, Mich.: Midwest Publication, n.d. ($1.50)

Cameron, Clive. *Going Metric With the U.S. Printing Industry*. Rochester, N.Y.: Graphics Art Research Center, Rochester Institute of Technology, 1972. ($8.70)
Comprehensive review of international metric developments as they relate to the graphic arts industry.

Donovan, Frank. *Prepare Now for a Metric Future*. New York: Weybright and Talley, 1971. Senior High. ($5.95)

Fairweather, Leslie, and Sliwa, Jan. *Metric Handbook*. New York: Van Nostrand Reinhold, 1972. ($5.95)

Fey, James T. *Long, Short, High, Low, Thin, Wide*. New York: Crowell, 1971. Primary. ($3.75)
A very elementary introduction to basic concepts of linear measurement, including a brief account of linear metric units of measure.

Gallant, Roy A. *Man the Measurer: Our Units of Measure and How They Grew*. Garden City, N.Y.: Doubleday, 1972. Intermediate. ($4.95)
Historical account with plenty of facts, thought-provoking questions and a strong argument for adoption of the metric system.

Gilbert, Thomas F., and Gilbert, Marilyn B. *Thinking Metric*. New York: Wiley, 1973. ($2.95)
Programmed instruction text.

Handbook for Hospitals. Boulder, Colo.: Metric Association, n.d. (1 copy, $0.50; pkg. of 10, $4.50)
Booklet that explains the uses and application of the metric system. Order from Ideal School Supply Company.

Hansen, Gary G. *A Guide to the Metric System*. West Lafayette, Ind.: Purdue University, 1972. (Available free from Research Coordinating Unit of the Division of Vocational Education of Indiana Department of Public Instruction, 120 W. Market Street - 16th Floor, Indianapolis, Ind. 46204. Phone: 633-4841.
A student reference guide to the very basic concepts of the metric system. Illustrations and textual material covers length, area, volume, weight, mass, time, temperature and luminous intensity.

Harris, Frank E. *Numbers and Units for Science*. Palo Alto, Calif.: Behavioral Research Laboratory, n.d. ($5.61)

Hirsch, S.Carl. *Meter Means Measure*. New York: Viking, 1973. ($4.95)
Story of the metric system presented in an illuminating and interesting manner.

International (SI) Metric System and How It Works. Tarzana, Calif.: Polymetric Services, Inc., n.d. ($12.95)
Designed as a text and reference guide. Includes material from many sources that updates the old European metric system and provides details of the unified international approved system now used by the metric world.

Introducing the Metric System. Chicago: Coronet Instructional Films, n.d. Grades 6-9. (1 copy, $1.50; classroom set of 25 copies, $30)
A programmed learning text.

Johnson, Dale M., and Van Osdol, Bob. *Handbook for Metric Conversion*. Moscow, Idaho: Idaho Research Foundation, 1973. ($4.25)
A complete metric conversion guide for the student, salesman, housewife and man-on-the-street. Numerous conversion problems to supplement the concise explanations.

Kelly, Gerard. *Metric System Simplified*. New York: Sterling, 1973. ($3.99)

Kempf, Albert, and Richards, Thomas. *Exploring the Metric System*. River Forest, Ill.: Laidlaw Brothers, A Division of Doubleday, n.d. ($0.48)

Kempf, Albert, and Richards, Thomas. *Using the Metric System*. River Forest, Ill.: Laidlaw Brothers, A Division of Doubleday, n.d. ($0.54)

Metric Is Coming. Washington, D.C.: National Science Teachers Association, 1973. ($0.75)
An instructional aid that explains the metric system for teachers and provides introductory activities for students in elementary and junior high school.

Metric Package. New York: American National Standards Institute, n.d. ($5.50)
Includes the following:
American National Standard Metric Practice Guide. $1.50)
Antitrust Implications of Metric Conversion. ($2)
Bibliography of Metric Standards. (Free)
Guide to Impact of Metric Use on Standards Development In Companies, Trade Associations, Technical & Professional Societies. ($1)
ISO Standard 1000-1973, SI Units and Recommendations for the Use of Their Multiples and of Certain Other Units. ($1.50)
Measuring Systems and Standards Organization. ($1.25)
Orientation for Company Metric Studies – Mechanical Products. 2nd edition. 1970. ($1)

Metric Supplement to Science and Mathematics. Boulder, Colo.: Metric Association, n.d. (1 copy, $1.25; pkg. of 10, $7.50)
Booklet that provides a series of practical problems in the application of the metric system. Order from Ideal School Supply Company.

The Metric System and SI – Measurements and Systems of Units. Skokie, Ill.: Sargent-Welch Scientific Company, n.d. (pkg. of 10, $15; pkg. of 20, $25; pkg. of 30, $30; answer booklet, $1.50)

A comprehensive treatment of the origins and history of measurement, bases of the English system, the metric system and the International System of Units (SI). May be used as a study text for classes learning the metric system in upper elementary grades, junior high school, high school or junior college.

Metric System Guide: Metrication in the United States, Orientation and Structure. Neenah, Wis.: J.J. Keller, 1973. ($59)

Loose-leaf binder containing basic background information on metrication in the United States. Updated by *Quarterly Supplementation.* ($10 per quarter)

Metric System Guide Bulletin Service. Neenah, Wis.: J.J. Keller. Monthly. ($5 per month)

Provides current information, including new developments affecting the educational community and the availability of metric-related educational aids and materials.

Metric Units of Measure Book. Boulder, Colo.: Metric Association, n.d. (1 copy, $0.40; pkg. of 10, $3.50)

Booklet explains the history and uses of the metric system. Order from Ideal School Supply Company.

Miller, David M. *Understanding the Metric System.* Rockleigh, N.J.: Allyn, 1973. ($1.80)

A programmed text.

Ploutz, Paul F. *Metric System.* Columbus, Ohio: Charles E. Merrill, 1972. ($2.95)

A programmed approach.

Robinson, John E. *How Could You Possibly Live With the Metric System.* Orange, Calif.: Human Design Advocates, n.d. ($4.25)

Written from a human factors viewpoint.

Ronningen, Helmer A. *Metrics: Measurement for Tomorrow.* Riverside, N.J.: Macmillan, 1972. ($1.50)

School Council for Curriculum and Examinations. *Metres, Litres, and Grams: Introduction to Metrication in the Primary School.* New York: Scholastic Book Services, 1971. ($2.70)

Sellers, Robert C. *Basic Training Guide to the New Metrics.* Washington, D.C.: National Tool, Die and Precision Machining Association, n.d. ($4.95)

Think Metric. Hyattsville, Md.: National Education Association, n.d. (30 copies, $2.25)

Vickers, J.S. *Making the Most of Metrication.* Boston: Cahners, 1969. ($10.95)

Vogel, Christine N. *How to . . . Convert the Metric System Into the U.S. System and Vice Versa.* Bellevue, Wash.: C.N. Vogel, 1973. ($3.95)

Willert, Frederic. *My Metric Measurement Manual.* Two Rivers, Wis.: Pauper Press, 1973. (Teacher edition, $2.50; Student edition, $1.50)

With a fantasy story, guides the reader by the discovery method through the basics of linear measurement.

Working With Color Rods in Metric Measurement, Units A, B, C. Skokie, Ill.: National Textbook Company, n.d. ($13.75)

UNITED STATES GOVERNMENT DOCUMENTS

The following publications are available from the United States Superintendent of Documents. Order by the given SD catalog number from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

"Brief History and Use of English and Metric Systems of Measurement With a Chart of Modernized Metric System." (revised, 1970), SD Cat. No. C13. 10:304A. ($.25)

Chisholm, L.J. *Units of Weight and Measures: International Metric and U.S. Customary Definitions and Tables of Equivalents*. National Bureau of Standards Miscellaneous Publication 286, SD Cat. No. 12. 10:286. ($2.25)

National Bureau of Standards. "All You Will Need To Know About Metric." (information sheet) Metric Information Office, National Bureau of Standards, Washington, D.C. 20234.

National Bureau of Standards. *A Metric America: A Decision Whose Time Has Come*. Special Publication 345 (July, 1971), SD Cat. No. C13. 10:345. ($2.25)

National Bureau of Standards. "Metric Conversion Card." Special Publication (July, 1972), SD Cat. No. C13. 10:365. ($.20)

National Bureau of Standards. "Modernized Metric Systems Wall Chart." Special Publication 304, SD Cat. No. C13. 10:304. ($.55)

National Bureau of Standards. "What About Metric?" Stock No. 0803-01191. ($.80)

Robinson, B.D. *Education* (An Interim Report of the U.S. Metric Study). National Bureau of Standards. Special Publication 345-6 (July, 1971), SD Cat. No. C13. 10:345-6. ($1.25)

Treat, C.F. *A History of the Metric Controversy in the United States*. (An Interim Report of the U.S. Metric Study). National Bureau of Standards. Special Publication 345-10 (August, 1971), SD Cat. No. C13. 10:345-10. ($2.25)

Senate Commerce Committee. *Metric Conversion*. (1972), SD Cat. No. Y4.C73/2:92-(64). ($1.25)

33

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